THE DANGERS AND EFFICIENCY OF THE MODERN TREATMENT OF WOUNDS.[1]

If the term antiseptic surgery applied to the time when the Lister methods first saw the light, it can scarcely be scientific to speak of antisepsis in the treatment of wounds at the present day. If foul sloughing or decomposing suppurations were common enough, in the past, it is certainly rare to meet such wounds in the surgery of to day. Much more in accordance with our knowledge, would it be to speak of the antimycotic action of certain drugs and methods of wound procedure, or the antimycotic rather than the antiseptic surgery. We seek today rather to inhibit suppuration than prevent decomposition.

All our solutions and agents were directed towards the above end. We try now to see how we can best approach the conditions favoring the minimum amount of suppuration. The great diversity existing in the methods of various surgeons in the treatment of wound, the one prefering carbolic acid, the other sublimate, another turpentine, simply proves the instability of our principles in this regard. Nothing is so great a reproach to modern surgery as this diversity of treatment. Yet it illustrates forcibly an active search after some true, quick, uniform method. If we study the effect of sublimate, carbolic acid, iodoform, salicylic acid and other antimycotic agents upon the animal cell, they are found to compromise the integrity of the cell irreparably at a point where micro-organisms are still capable of living. In other words, whatever the composition of an *antimycotic* agent it is, and must necessarily be, a poison to the economy, and any such agent introduced into the human economy in concentration sufficient to kill the vegetable micrococcus of suppuration must first affect the more delicate a susceptible cells of the human organism. We have only to turn to our literature to find that some of our modern antimycotic agents (sublimate or iodoform), are directly responsible for death in certain cases. The changes found post-mortem in these cases affect most markedly the digestive tract and the kidney.(Glomerulo-Nephritis).

---

[1] Ueber die Gefahren und die Leistungefahigkeit der modernen Wundbehandlung. Von Dr. EMIL SENGER (Crefeld). Berliner Klinik, heft 6, Berlin, 1888.

If we simply consider some of the antimycotic methods, or antiseptic methods, as they are called, in vogue in the leading clinics, as that of von Bergmann (Annals of Surgery, 1888), we can easily believe that not only slight intoxications escape the notice of clinicians, but that many patients to-day become victims of our treatment of wound. But the dangers incurred in the use of our antimycotic agents are greater if the patient come to the operation with parenchymatous disease of the organs. To illustrate, we may cite the experience of James Israel who would in the future prefer simple salt solution to sublimate in irrigating a wound after nephrectomy, this author having had a fatal case where sublimate was used. It is certainly a proof of the unscientific nature of our methods of to-day. In an amputation where we have comparatively little suppuration, strong antimycotic agents, carbolic (1 in 20), should be used, whereas in purulent peritonitis or in irrigating the serous cavities we are apt in suppurating disease to use an agent of very weak power, and purely inert in the presence of the micro-organisms of suppuration. Among the latter agents we have salicylic acid 1-5000, boric acid solution 2% or 4%, or the method of von Bergmann who simply touches the surface with a swab of sublimate, 1-2000, or places a strip of iodoform gauze 1 metre long in the pleural cavity or abdomen to keep the wound aseptic, as it is called, free from suppuration and infection. Do those means really attain this object? Actual experiment speaks to the contrary. Boric acid, according to Senger, does not affect the staphylococcus pyogenes aureus, even after an exposure of five days, and salicylic acid kills this micro-organism in the strength of 1-1000 after 6 minutes. In those situations (pleura, peritoneum, etc.) where these weak solutions are used, the strong solutions and antimycotics bring the great dangers of degeneration with fatal issue stronger into the fore ground. Though bacterial experiments have their scientific interest, the test tube and cuture medium is not so satisfactory a substitute for the human economy as we might wish. The results obtained thus far in this respect are impractical. It is certainly of little use to apply to any fresh incised wound an antimycotic agent with a view of preventing suppuration, especially if, as we know, these agents perform their work imperfectly. It will be much more satisfactory if in the future we employ for our simple incised wounds (no pus being present) simply salt solution, according to the method of Landau in his myomotomies. In suppurating wounds we could employ our antimycotic agent, *but* in diminished quantities to that at present in vogue. The author (Senger) sees very little future to the endeavors of Laplace and Garré to obtain an agent which will prevent the coagulation of albumen and penetrate deeply into the surrounding tissue (Acetic acid, sublimate). Much more preferable would it be to obtain or discover an agent which, as an antimycotic, would act locally. In this we could hope to eliminate dangerous or fatal intoxications from our surgery. We must study more closely the problem laid down some time since by Virchow in his article upon the strife between cell and micro-organism. In incised clean wounds,then,we should use sterilized water or salt solution, whenever we must still use the antimycotic agent in foul decomposing processes. In simple pure suppurations we may use our antimycotic, but in quantities limited according to the nature of the wound and the knowm dangers of fatal degenerations.

HENRY KOPLIK.